

ART. XIII.—*Lectures on Yellow Fever; its Causes, Pathology, and Treatment.* By JOHN HASTINGS, M. D., United States Navy. 8vo. pp. 69. Philadelphia: Lindsay & Blakiston, 1848.

A CLOSE analysis of the various histories of yellow fever, as it has occurred in different localities and at different periods, that have been recorded by various observers, would show, we believe, very conclusively, that under this title are included several forms of disease, which, though they may resemble each other in some of their leading features, are, nevertheless, distinct in their true pathological characters. It is difficult in any other way to account for the discordance, in regard to almost everything relating to the disease, which marks the descriptions of it furnished to us by different writers, of whose fidelity and accuracy of observation we have no reason to doubt. Discrepancies of opinion in regard to the etiology of yellow fever, and discordant views in regard to its true pathological character we can easily understand, but we cannot account for the history of the ordinary symptoms and progress of the disease, and of the lesions discoverable in the bodies of those in whom it has proved fatal, furnished to us by one authority, differing materially from the history furnished by another authority of equal respectability, excepting upon the supposition that the two histories have been drawn from cases not of the same, but of different affections, resembling, but not identical with each other.

In the work before us, Dr. Hastings furnishes us with the result of his observations upon the causes, pathology, and treatment of yellow fever, which certainly differ in many important particulars from the observations recorded by others. As this gentleman's opportunities for studying the disease have, however, been unquestionably very extensive, his conclusions in relation to the disease are deserving of an attentive consideration.

In relation to the all-important and much contested question of the cause by which the disease is produced, Dr. Hastings is very positive that the yellow fever is generated invariably by the malaria or exhalations from an alluvial marshy soil, subject to periodic inundation and draining; the poison being eliminated during the process of desiccation under a high degree of solar heat. He states it as a positive certainty, that where yellow fever prevails, there is also found every variety of intermittent, and very generally, all varieties of remittent and bilious fever; these diseases, arising, in his opinion, from the same poison, but in different degrees of intensity.

This error has been so frequently and conclusively refuted, that we must express our surprise that Dr. H. should again bring it forward and announce it in so positive a manner. Though the facts he adduces in reference to the circumstances under which the disease occurred in the lower portion of Florida, and on the coast of Mexico, would appear to establish the correctness of the views advanced by him; yet allowing to these facts all the weight that can be justly claimed for them, they are met by a host of others, which are entirely opposed to the conclusion which the author has drawn from them.

Dr. Hastings has never seen a single instance where there was the least cause to suppose that the fever originated on board of ship, notwithstanding he has frequently seen ships in the conditions said to give rise to it; and never saw it on board of any of them, unless it was prevailing on shore, and then, even, he has seen vessels escape for a long time, when, according to the views entertained by others, they should have originated the disease.

The facts adduced by the author in support of this statement are, we confess, particularly strong, but they do not strike us as conclusively supporting his general position in regard to what he supposes to be the only source of yellow fever.

Dr. Hastings believes, that in every instance in which the disease occurs on board of ships, whether at sea or upon the coast, it is produced by malaria carried to them from the land through the medium of the air. The evidence which the author cites in proof of this position, is, in our opinion, not very strong. If the malaria giving rise to yellow fever can be conveyed to great distances through the

air undispersed, and undiluted by the latter, how happens it that when the yellow fever makes its appearance in a city, it is very generally confined to particular districts, beyond which it is seldom found to extend?

Our author denies the contagious character of yellow fever. He does not believe it possible to create the disease in a person confined among, and waiting upon any number of those affected with it, provided these are removed from the district where the disease was contracted, to a position known to be free from its invasion, and attended by persons who had not been exposed to the disorder, otherwise than by contact with the sick. He has seen at Indian Key, Florida, where the naval hospital was situated, in the epidemic of 1841 and '42, patients admitted in every stage of the disease, and even the bodies brought there of those who had died of it at other places, and yet without a single case occurring upon the island.

The history of the symptoms and ordinary progress of yellow fever as laid down by Dr. Hastings differs in some particulars, from that given by others. It certainly does not agree, in a few important points, with the general features and march of the disease, as it has fallen under our notice in Philadelphia. The remarkable subsidence of all the more violent symptoms, which usually takes place about the third, fourth, or fifth day of the disease, and leads the inexperienced observer and the deceived patient to conceive hopes of recovery, when, in very many instances, the remission is to be followed, after a few hours, by the black vomit and a state of collapse, is a circumstance, remarks Currie, in his work on the Endemic Diseases of the United States, without a parallel in the history of fevers, and may therefore be considered as pathognomonic of yellow fever. This peculiar feature of the disease, which is noticed by almost every American authority, is wanting in the general description given of it by the author; though in his remarks on the prognosis, he notices, incidentally, as a remarkable feature of the disease, a complete remission of the more prominent symptoms, which frequently occurs about the fifth day.

In regard to the pathological anatomy of the disease, the following account is given by Dr. Hastings:

"The brain and its membranes show in all cases results of active and extensive disease. The substance of the brain is rather firmer than natural, and completely engorged with blood, both upon its surface and interior structure: the ventricles are generally filled with a yellowish or bloody serum, although in some cases they are preternaturally dry; yet the amount of bloody serum contained within the cranium generally is very large. The substance of the brain is so fully charged with blood, that when the medullary matter is cut across, numerous points bleed freely; and its whole structure is so coloured by the amount of blood contained in it, that there is but little difference existing between the medullary and cineritious matter. The membranes of the brain are all thickened; the dura mater particularly so in the region of the superior longitudinal sinus; and the glands of Pacchioni are very much enlarged. The arachnoid membrane is greatly thickened, of a pearly hue, and tears with difficulty, compared with its delicate normal condition. The pia mater is thick and whitish, like the arachnoid, to which it is firmly adherent; there is often a quantity of partially organized lymph thrown out upon the surfaces of these two membranes, sometimes an eighth of an inch in thickness; and I have even seen it nearly a quarter of an inch thick, having found these two coverings so thickened and strengthened by the process of inflammation, that I have held the whole mass of the brain, engorged as it is, and with the dura mater attached, by these two delicate membranes, that in their natural condition break at the slightest touch.

"The alterations of the spinal marrow and its membranes are the same as those found in the interior of the cranium. The vessels of the membranes of the brain and spinal marrow are greatly distended with blood.

"The heart and lungs are not at all affected in yellow fever."—

"The stomach is filled with, or contains a large quantity of black vomit; its mucous membrane is thickened to twice its healthy condition; it is dark-coloured, softened, and in a state of sphacelus, and frequently removed in large patches, particularly about the cardiac orifice. Throughout the rest of its surface, it is so soft that it is easily removed by the handle of a scalpel, or the finger nail, and it is also about this orifice and smaller curvature, greatly injected with blood.

Throughout its surface, are small bright scarlet spots, looking so much like fresh drops of blood, that I have seen the finger of those unaccustomed to these examinations, passed over them, thinking to brush these stains away. But they are fixed in the mucous membrane. This condition extends to the pyloric orifice; from this out, the intestines, both large and small, are unaltered and natural, with the exception of a slight degree of congestion or injection of the mucous membrane of the duodenum."

"The liver undergoes a very great change. It is rather contracted and of a yellow colour, resembling very much the colour of old box-wood; this is particularly observable on the anterior part of the right lobe, although it pervades more or less its whole structure. Its substance is very much firmer than natural, indeed, it is almost of a cartilaginous consistence; so much so, that it is nearly impossible to penetrate a piece of it with all the force you can exert, when holding it between the fingers and thumb. It cuts with a hard, shining surface, and tears rather smoothly; its normal or granular appearance being almost or entirely lost."

"The gall-bladder is natural and contains a moderate quantity of dark bile. The spleen is unaltered, except in cases where the deceased had suffered from frequent attacks of intermittent fever; in these cases it was enlarged and softened."

"These comprise all the changes effected by a fatal attack of yellow fever terminating upon the seventh day.

"In the second case, wherein the disease comes to a fatal issue upon the fourteenth day or at a later period, very different pathological appearances present themselves. In these cases, the brain and spinal marrow are softened; their membranes are thickened, and there is generally a very large amount of yellowish or bloody serum within the cranium and spinal canal. The heart and lungs are healthy. The stomach is in much the same condition as already described: but the mucous membrane of the duodenum, small and large intestines, is greatly injected, thickened and softened, of very dark colour, and in some cases removed or destroyed in patches. The glands of Peyer and Brunner are injected and enlarged. The whole track of the mucous membrane resembling the change of structure met with in patients dying of typhus fever, but not to the same extent. The stomach is sometimes filled with black vomit, and the intestines contain dark matter resembling it. The mucous membrane of the bladder is injected with blood, and spotted with many scarlet points. The spleen, if altered at all, is rather softer than natural." "The liver is engorged with dark blood; about natural size, of dark colour and softened. The kidneys and other viscera are found to be in normal condition. The blood remains in its liquid state in those who die; but there does not appear to be any peculiarity in that taken from yellow fever patients. It is observed to be cupped, has the buffy coat and same appearances as all blood taken from those suffering by active inflammation and a high state of fever. It contains, doubtless, a large amount of bile or its constituents, owing to the crippled or suspended functions of the liver."

Dr. Hastings has made a strange misstatement in commenting upon M. Louis's account of the pathological changes observed in the fatal cases of yellow fever observed by him at Gibraltar in 1848. So far from the latter having never inquired into the condition of the brain and spinal marrow, as our author asserts, but passing them by without a word and even without observation, M. Louis informs us, that he examined the brain and spinal marrow with great minuteness; the changes he discovered he did not consider, however, peculiar to yellow fever, the same being met with in typhus fever and other diseases.

In the treatment of the disease, Dr. Hastings's chief dependence is in bleeding in the early period of the stage of excitement. Bleed, he remarks, *ad deliquium animi*—the amount of blood should not be regarded in the least—let it flow until the fever breaks, and the skin upon the forehead becomes moist. Calomel in large doses, followed by the sulphate of magnesia; blisters to the epigastrium and hypochondrium;—the blistered surface being dressed with mercurial ointment, in order to bring the system under the influence of mercury, and to keep up a mild degree of ptyalism for about seventy-two hours from the commencement of the attack; during which time not a mouthful of anything should be taken into the stomach unless the vomiting continue. The bowels to be kept open by enemata of

Castor oil, turpentine, and some mucilage; the thirst to be allayed by ice or iced water held in the mouth, but not swallowed.

For irritability of stomach, he directs from a quarter to half a drop of creasote, dissolved in ether or acetic acid, every hour.—combining it, when there is great excitement of the nervous system, with small doses of morphia. Iced water is to be kept constantly applied to the head, and the skin sponged with cold water when it becomes hot and dry. Sinapisms are directed to the spine to relieve the pain in the small of the back.

When, as it sometimes happens, after the lapse of twenty-four or forty-eight hours, or more, the skin becomes hot and dry, with violent pain in the small of the back and throbbing pain in the head, with disposition to coma, the author directs a repetition of the bleeding; and is satisfied in his own mind that he has saved life by so doing; although, he remarks, the necessity for a second bleeding does not arise in more than one case in two hundred, or at least in one hundred.

"When the above system of treatment is carried out, rigorously, the patient generally, on the fourth day, but at most universally on the fifth, is free from all fever, and has not a bad symptom left, and desires something to eat, and if he be moderately indulged with a little gruel of tapioca or some such innocent diet, sweetened, spiced, and seasoned with wine, he will improve very rapidly; at the same time, that is, from the fourth or fifth day, he should be allowed to drink weak brandy and water—this is one of the best stimulants that can be employed—but he should be stimulated gradually; and, from this time, no other medicine will be required than small doses of extract of colocynth or taraxacum and blue mass. Where the nervous system is much disturbed, small doses of strychnia can be added with advantage, followed occasionally by a Seidlitz powder, merely sufficient to correct the tendency to constipation, which exists for some time during recovery."

Dr. Hastings considers that no disease is more entirely under the control of medical treatment than yellow fever, nor is there any one more imperatively demanding it.

We have considered the above notice of the work before us due to its author. His opportunities for studying an important disease have certainly been sufficiently extensive, and his object in publishing the result of his observations, which are in the main interesting, has been evidently to instruct his fellow-practitioners. While, however, Dr. H. feels a firm conviction of the truth and correctness of the views he has advanced, we fear that his estimate of the facts that have fallen under his notice has been, occasionally, somewhat superficial and one-sided, and that his deductions cannot be received as invariably accurate; while, in more than one instance, the style in which his observations are communicated is liable to well-founded objections.

D. F. C.

- ART. XIV.—1. *Thirtieth Annual Report of the Physician and Superintendent of the McLean Asylum for the Insane.* Boston: 1848.
2. *Twenty-fourth Annual Report of the Physician and Superintendent of the Retreat for the Insane.* Hartford: 1848.
3. *Thirty-first Annual Report of the State of the Asylum for the relief of Persons deprived of the use of their Reason.* Philadelphia: 1848.
4. *Twentieth Annual Report of the Physician and Superintendent of the Western Asylum.* Richmond, Va.: 1848.
5. *Annual Report of the Superintendent of the Kentucky Lunatic Asylum.* 1848.
6. *Reports of the Physician, and the Superintendent and Resident Physician of the Lunatic Asylum.* Columbia, South Carolina: 1847.

1. DR. BELL's report is unusually brief, being restricted to "a general view of the institution and its results for the year." He has confined himself to these narrow limits, for the purpose of giving room to the accompanying communication from a committee of the Trustees of the Massachusetts General Hospital, on the history and results of the administration of sulphuric ether as an anaesthetic agent.

The following are the statistics of the McLean Asylum for the year: